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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,306	06/01/2006	Mitsukuni Sakashita	SH-0063PCTUS	3704
21254 7590 06/22/2009 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817				
EXAMINER DEHGHAN, QUEENIE S				
ART UNIT		PAPER NUMBER		
1791				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/581,306

**Applicant(s)**

SAKASHITA, MITSUKUNI

**Examiner**

QUEENIE DEHGHAN

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 6/1/06

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 8, 11, 13, 16 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida (2002/0073741). Ishida disclose a method for manufacturing glass base material comprising forming porous preform comprising a Germanium doped core and an inner silica clad layer surrounding the core and having a lower refractive index than the core ([0034]-[0036]), vitrifying the porous preform into transparent glass ingot that is 80mm in diameter ([0044]), heating and elongating the ingot in an axial direction in an electric furnace into a core rod ([0046]), forming an outer clad layer surrounding the core rod by depositing on the outer surface of the rod to form a porous glass body ([0051]-[0053]), and vitrifying the porous glass body into a transparent glass body ([0061]).
3. Regarding claims 3, 5, 11, 13 and 19, Ishida teaches elongating the core ingot to a core rod with a diameter of 36mm and a ratio D/d of greater than 4.0, i.e. 4.1 ([0013], [0047]). Since D is 36, then d is 9, which means the thickness of the inner clad layer is greater than 1mm.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-4, 11-12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (2002/0073741) in view of Nunome et al (2003/0110811). Ishida discloses fabricating a porous core rod having a ratio of the outer diameter  $d$  of the core to the outer diameter of the first cladding of  $D/d \geq 4.0$  (abstract), which is the equivalent of a  $d/D$  ratio of 0.25. Nunome similarly teaches fabricating a preform comprising a core, a first cladding with a lower refractive index than the core and a second cladding, wherein the value of  $D/d$  is  $>4.8$ , which is smaller than a  $d/D$  of 0.21 ([0013]). Ishida teaches the greater the  $D/d$  ratio, the less OH groups would diffuse to the core. Accordingly it would have been obvious to one of ordinary skill in the art at the time of the invention to have made the glass body of Ishida to have a  $D/d$  ratio of  $>4.8$  in order to minimize the OH diffusion into the core.

6. Regarding claim 19, Nunome teaches  $D/d$  ratio greater than 4.8, i.e. 4.9. Ishida teaches elongating the core ingot to a core rod with a diameter of 36mm and a ratio  $D/d$  of greater than 4.0, i.e. 4.1 ([0013], [0047]). Since  $D$  is 36, then  $d$  is 9, which means the thickness of the inner clad layer is greater than 1mm.

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7. Claims 6, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (2002/0073741) and Nunome (2003/0110811), as applied to claims 1 and 3 above, in view of Kudo et al. (JP Abstract 2000-086265). Ishida teaches using an electric furnace but does not specify a heat insulator. Kudo teaches a furnace for heating a porous preform, wherein a heat insulator for the electric furnace comprises carbon material containing less than 810ppm ash (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the heat insulator with a carbon material containing less than 810ppm ash in the electric furnace of Ishida in order to prevent impurities from entering the preform from the heating furnace.

8. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (2002/0073741) in view of Chang et al. (EP 1 104 891). Ishida teaches applying a second cladding on the core rod, but does not teach a rod in tube method. Chang teaches a method comprising forming a porous glass material comprising a core part doped with germanium and an inner clad layer that has a lower refractive index than the core part surrounding the core ([0021]), transforming the porous glass material into a transparent glass ingot ([0024]), heating and elongating the core ingot in an axial direction to make a core rod and forming a outer clad layer by welding a glass tube on the surface of the core rod ([0034]). Chang presents another well known way for applying an outer clad layer onto a core rod. Chang also express a concern for OH diffusion into the core ([0022]). It would have been obvious to one of ordinary skill in the art at the time of the invention to have welded a glass tube as a well known alternative way

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for forming an outer clad layer on the core rod of Ishida as it is expected to have achieve the predictable result of obtaining a preform with the necessary cladding layer and a low OH diffusion into the core.

9. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (2002/0073741) in view of Hirano et al. (2003/0145630). As mentioned above Ishida discloses a core rod that has been elongated, the deposition of glass fine particles on the rod to form a porous glass body, and vitrifying the porous body into a transparent glass ([0051]-[0053], [0061]). However, Ishida does not teach an etching step. Hirano teaches etching the outer surface of the core rod with fluorine prior to adding an outer clad layer ([0187]). Like Ishida, Hirano is also concerned with OH diffusion into the core. It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the etching of the core rod step in the method of Ishida in order to remove OH impurities that had adhered to core rod during processing prior to adding an outer cladding.

10. Claims 10 and 18 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishida (2002/0073741). Ishida discloses a glass base material (abstract). In the event any differences can be shown for the product of the product-by-process claims 10 and 18, as opposed to the product taught by the reference of Ishida, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results. The product in the product-by-process claims 10 and 18 are the same as

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or obvious from a product of the prior art. See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUEENIE DEHGHAN whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Queenie Dehghan/  
Examiner, Art Unit 1791

